

REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Claim 1 has been cancelled, without prejudice. New claims 35 and 36 have been added to the application to more specifically define the solid reagent. Support for new claims 35-36 is found on page 7, line 29 to page 9, line 5 of Applicants' specification. Furthermore, Applicants direct the Examiner's attention to the Attachment which shows chemical reaction formulas for preparing the solid reagents. This Attachment is not intended to limit the claims in any way, but rather provide helpful information to further understand examples of the invention.

Claims 2-4 and 6 have been amended to depend from claim 35. Further, claims 6, 18, 19 and 20 have been amended to clarify that the polymerizable monomer is chloromethylstyrene and the anion exchange group is a quaternary ammonia type anion exchange group. New claims 37-47, which correspond to claims 2-4, 6, 12-14, and 18-21, have been added to the application, but depend from claim 36. New claims 40, and 44-46 clarify that the polymerizable monomer is 4-vinylpyridine and the anion exchange group is a quaternary pyridinium-type anion exchange group.

No new matter has been added to the application by the above-discussed amendments.

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

The rejection of claims 1-4, 6, 12-14 and 18-21 under 35 U.S.C. § 103(a) as being unpatentable over Calcaterra et al. is respectfully traversed.

The Examiner takes the position that Calcaterra et al. disclose a graft copolymer having a base polymer in the form of fabrics or fibers and a grafting vinyl monomer containing at least one reactive functional group grafted onto a fabric material.

As discussed above, new independent claims 35 and 36 more specifically define Applicants' solid reagent. Calcaterra et al. fail to teach or suggest either a chloromethylstyrene graft polymer with a quaternary ammonia type anion exchange

group, as recited in new claim 35, or a quaternized vinyl pyridine graft polymer, as recited in new claim 36.

Furthermore, the Calcaterra et al. reference states:

We have designed a system where the antimicrobial agent is covalently bound to the modified fabric, and where these covalent bonds are stable (i.e., not hydrolyzed or otherwise broken) under the conditions of product use. We have designed a system where the antimicrobial agent expresses its antimicrobial activity in its bound state, a system characterized by the absence of release or diffusion of the antimicrobial from the fabric. To obtain antimicrobial action from our products by free (unbound) antimicrobial or by release of the antimicrobial agent from the fabric is detrimental to our invention, and in fact steps are taken to ensure the absence of leaching of antimicrobial agent under the intended conditions of its use.

(Emphasis added.) (See column 6, lines 22-26 of Calcaterra et al.)

Additionally, the drawing in column 9 of the reference illustrates a reaction between the functional groups on the graft copolymer of the fabrics and antimicrobial agents.

Calcaterra et al. teach that the fabrics and antimicrobial agents should make a stable covalent bond. If the graft polymers recited in Applicants' new claims 35 and 36 are used in the antimicrobial fabrics of the reference, such a stable covalent bond can not be obtained. Thus, a person of ordinary skill in the art would not employ the graft polymers recited in Applicants' claims 35 and 36 for the antibacterial fabrics described by the reference, since the reference requires a stable covalent bond. In fact, the reference teaches away from the use of Applicants' recited graft polymers, because the reference requires a stable covalent bond.

Additionally, a functional group of the solid reagent of Applicants' invention does not make a covalent bond with a starting compound, whereby the solid reagent of Applicants' invention can convert a starting compound to a desired compound. By not making a covalent bond, Applicants' solid reagent can recover its reactivity by an appropriate regenerant. (See page 4, lines 15-26 of Applicants' specification.)

For these reasons, the invention of claims 2-4, 6, 12-14, 18-21, and new claims 35-47 is clearly patentable over Calcaterra et al. [Claim 1 has been cancelled.]

The rejection of claims 1-4, 6, 12-14 and 18-21 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of US '432 has been overcome by the filing of a Terminal Disclaimer.

The rejection of claims 1-4, 6, 12-14 and 18-21 under 35 U.S.C. § 103(a) as being obvious over Fujiwara et al. (US '432) is respectfully traversed.

Applicants submit herewith a paper entitled "Statement Concerning Common Ownership", which establishes that Application 10/617,025 and US Patent 6,703,432 were, at the time the invention of Application 10/617,025 was made, owned by Ebara Corporation.

MPEP 706.02(l)(2)(II) indicates that this statement alone is sufficient evidence to disqualify US Patent 6,703,432 from being used in a rejection under 35 U.S.C. § 103(a) against the claims of Application 10/617,025.

Thus, the obviousness rejection based on Fujiwara et al. is no longer tenable and should be withdrawn.

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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March 13, 2007

Solid Reagents

